

CLAIMS

What is Claimed is:

1. A conditional access module, for controlling access to a media program via a receiver communicably coupleable to the conditional access module, comprising:
5 a first processor;
a second processor; and
an interface module, communicatively coupled to the first processor and the second processor, the interface module for processing all communications with the conditional access module and externally manifesting a single virtual processor to the
10 receiver.
2. The apparatus of claim 1, wherein the first processor performs a subset of functions to control access to the media program and the second processor performs a second subset of functions to control access to the media program.
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3. The apparatus of claim 1, wherein:
the first processor is communicatively coupled a first processor memory;
the second processor is communicatively coupled to a second processor memory;
and
20 wherein the first processor memory is isolated from the second processor and the second processor memory is isolated from the first processor.
4. The apparatus of claim 1, wherein the interface module comprises:
a first module for receiving conditional access module messages; and
25 a second module for interpreting the received messages and for generating first processor messages for the first processor and second processor messages for the second processor from the received messages.

5. The apparatus of claim 4, wherein the interface module comprises:
a third module for receiving a first set of response messages generated by the first processor and a second set of response messages generated by the second processor; and
a fourth module for generating conditional access module response messages
5 using at least a portion of the first set of response messages and at least a portion of the second set of response messages.
6. The apparatus of claim 1, wherein the interface module receives messages
from the receiver, interprets the received messages, and generates first processor
10 messages for the first processor and second processor messages for the second processor.
7. The apparatus of claim 6, wherein the first processor and second processor
operate independently and the interface module generates first processor messages for the
first processor and second processor messages for the second processor by alternately
15 directing received messages to the first processor and the second processor.
8. The apparatus of claim 6, wherein the first processor messages and the
second processor messages define a functional allocation between the first processor and
the second processor, and wherein the functional allocation is time-varying.
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9. The apparatus of claim 8, wherein the functional allocation is time varied
according to a clock.
10. The apparatus of claim 8, wherein the received messages include
25 encrypted data and the functional allocation is time varied according to the encrypted
data.

11. The apparatus of claim 6, wherein the interface module receives a first set of response messages generated by the first processor and a second set of response messages generated by the second processor and generates conditional access response messages using at least a portion of the first set of response messages and at least a
5 portion of the second set of response messages.

12. The apparatus of claim 1, wherein the interface processor is a processor.

13. The apparatus of claim 1, wherein the interface processor is a hardware
10 state machine.

14. The apparatus of claim 1, wherein the first processor and the second processor are communicatively coupled to a shared charge pump.

15 15. The apparatus of claim 1, wherein the first processor and the second processor are communicatively coupled to a shared programming control module.

16. The apparatus of claim 1, wherein the first processor and the second processor each include it's own separate components selected from the group comprising:
20 voltage supply;
clock;
coprocessor;
read only memory; and
random access memory.

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17. The apparatus of claim 1, wherein the first processor and the second processor include separate logical address ranges.

18. The apparatus of claim 1, wherein the first processor and the second
30 processor include separate physical address ranges.

19. A method of controlling access to a media program, comprising the steps of:

receiving a message in a conditional access module from a receiver, the message
5 comprising encrypted information to be decrypted by operations independently performed
by a both a first processor and a second processor in the conditional access module;
generating first processor commands and second processor commands from the
message;
providing the first processor commands to the first processor and the second
10 processor commands to the second processor;
receiving a first processor response from the first processor;
receiving a second processor response from the second processor; and
generating a conditional access message response from at least a portion of the
first processor response and the second processor response.

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20. The method of claim 19, wherein the encrypted information is a control
word packet and the conditional access message response is a control word.

21. The method of claim 19, wherein first processor and the second processor
20 operate independently and wherein the step of generating first processor commands and
second processor commands from the message comprises the steps of:

alternately directing received messages to the first processor and the second
processor.

22. The method of claim 21, wherein the first processor messages and the
25 second processor messages define a functional allocation between the first processor and
the second processor and wherein the functional allocation is time varying.

23. The method of claim 22, wherein the functional allocation is time varied
30 according to a clock received externally from the conditional access module.

24. The method of claim 22, wherein the received messages include encrypted data and the functional allocation is time varied according to the encrypted data.

- 5 25. An apparatus for controlling access to a media program, comprising:
 means for receiving a message in a conditional access module from a receiver, the
 message comprising encrypted information to be decrypted by operations independently
 performed by a both a first processor and a second processor in the conditional access
 module;
- 10 means for generating first processor commands and second processor commands
 from the message;
 means for providing the first processor commands to the first processor and the
 second processor commands to the second processor;
 means for receiving a first processor response from the first processor;
- 15 means for receiving a second processor response from the second processor; and
 means for generating a conditional access message response from at least a
 portion of the first processor response and the second processor response.
- 20 26. The apparatus of claim 25, wherein the encrypted information is a control
 word packet and the conditional access message response is a control word.